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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/660,168

09/11/2003

Norio Okada

FPM-02302

7592

7590

09/09/2004

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EXAMINER

TRINH, HOA B

ART UNIT

PAPER NUMBER

2814

DATE MAILED: 09/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. 10/660,168	Applicant(s) OKADA, NORIO	
	Examiner Vikki H Trinh	Art Unit 2814	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 June 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 6-11, 15-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 6-11 and 15-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 June 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☒ Certified copies of the priority documents have been received in Application No. 09/822,791.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 6-11 and 15-25 are rejected under 35 U.S.C. 102(e) as being anticipated by Shih et al. (6,100,118)

As to claim 6, Shih et al. '118 discloses a semiconductor device having a substrate 10 (fig. 3), a first dielectric layer 34 (fig. 3) overlying the substrate 10, a pair of fuse terminals 38A-B (fig. 3) embedded in a pair of trenches (fig. 3) of said first dielectric film, a fuse element 41 (fig. 3) formed on said first dielectric film in electrical contact with said pair of fuse terminals 38A-B (fig. 3). See also attachment hereinafter.

As to claim 7, a plurality of top interconnect lines (fig. 3), each having a line body (fig. 3) formed as a common layer with said fuse terminals 38A-B and a protective film (fig. 3) formed on said line body as a common layer with said fuse element 41(fig. 3).

As to claim 8, a plurality of electrode pads 42 (fig. 3) each having a pad body (fig. 3) formed as a common layer with said fuse terminals and a protective film formed on said pad body as a common layer with said fuse element 18A,B. See fig. 1.

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As to claims 9 and 18, in addition to the limitation of claim 1 above the semiconductor device further includes a second dielectric film 44 (fig. 3) formed to cover the first dielectric film 34 and the fuse element 41 (fig. 3); a third dielectric film 54 (fig. 3) formed on the second dielectric film 44; and an opening 88 (fig. 3) formed in the third dielectric film to expose a part of the second dielectric film above the fuse element 41 (fig. 3).

As to claim 10, the fuse element is made of TiN film (col. 7, line 11).

As to claim 11, the fuse terminals are made of Al (col. 7, lines 11-14).

As to claim 15, in addition to the limitation of claim 1 above, the semiconductor device further includes a third trench (fig. 3), wherein the first and the second fuse terminals 38A-38B are embedded in the first and second trench, an interconnection line (fig. 3) embedded in the third trench (fig. 3) of the first dielectric film 34 (fig. 3), and a first conductive film 42 (M2) (fig. 3).

As to claims 16, 19, 20 and 21, the fuse element 41, the interconnection line (fig. 3), the electrode pads (fig. 3), and the first and second conductive film (fig. 3) are made of the same material as each other. (col. 7, lines 10-15).

As to claim 17, the fourth trench (fig. 3) formed in the first dielectric film 34 apart from the first, second, and third trenches; an electrode pad (fig. 3) embedded in the fourth trench (fig. 3); and a second conductive film 48 formed on the electrode pad (fig. 3) in contact therein; and the second conductive film 48 (fig. 3) being made of the same material as the first conductive film (col. 7, lines 10-14).

As to claims 22 and 23, the fuse element 41 is formed all over the pair of fuse terminals 38A-B (fig. 3).

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As to claim 24, the fuse element 41 is formed all over the fuse terminals 34A-B (fig. 3) and the first conductive film (fig. 3) is formed all over the interconnection line (fig. 3).

As to claim 25, the fuse element 41 is formed all over the fuse terminals 38A-38B, the first conductive film (fig. 3) is formed all over the interconnection line (fig. 3), and the second conductive film 48 is formed all over the electrode 42 (M2) (fig. 3).

### ***Response to Arguments***

3. Applicant's arguments with respect to claims 6-11 and 15-25 have been considered but are moot in view of the new ground(s) of rejection.

### **Conclusion**

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Vikki Trinh whose telephone number is (571) 272-1719. The

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Examiner can normally be reached from Monday-Friday, 9:00 AM - 5:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, Mr. Wael Fahmy, can be reached at (571) 272-1705. The office fax number is 703-872-9306.

Any request for information regarding to the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Also, status information for published applications may be obtained from either Private PAIR or Public Pair. In addition, status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspro.gov>. If you have questions pertaining to the Private PAIR system, please contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

Lastly, paper copies of cited U.S. patents and U.S. patent application publications will cease to be mailed to applicants with Office actions as of June 2004. Paper copies of foreign patents and non-patent literature will continue to be included with office actions. These cited U.S. patents and patent application publications are available for download via the Office's PAIR. As an alternate source, all U.S. patents and patent application publications are available on the USPTO web site ([www.uspto.gov](http://www.uspto.gov)), from the Office of Public Records and from commercial sources. Applicants are referred to the Electronic Business Center (EBC) at <http://www.uspto.gov/ebc/index.html> or 1-866-217-9197 for information on this policy. Requests to restart a period for response due to a missing U.S. patent or patent application publications will not be granted.

Vikki Trinh,  
Patent Examiner  
AU 2814



LONG PHAM  
PRIMARY EXAMINER